

## Glenn Research Center, Environmental Programs Manual

### Chapter 34 – HANDLING, REUSE, AND DISPOSAL OF SOIL

**NOTE:** The current version of this Chapter is maintained and approved by the Environmental Management Office (EMO). The last revision date for this chapter is November 2004. If you are referencing paper copies, please verify that it is the most current version before use. The current version is maintained on the Glenn Research Center (GRC) intranet at <http://smad-ext.grc.nasa.gov/emo/pub/epm/epm-contents.pdf>. Approved by: EMO Chief, Michael Blotzer {<mailto:Michael.J.Blotzer@nasa.gov>}

#### PURPOSE

This chapter establishes policies and procedures for the handling, reuse, and disposal of soil at GRC. The guidance provided in this chapter is applicable to GRC employees and contractors at all levels who in any way participate in the development and execution of GRC action involving the handling, excavation, storage, transportation, and/or disposal of soils. It sets forth guidelines to ensure that such operations do not result in solid or hazardous wastes being disposed of improperly and to ensure that areas of contamination are promptly addressed.

#### APPLICABILITY

This chapter is applicable to all personnel at GRC including, but not limited to, civil servants, contractor personnel, and students.

#### DEFINITIONS

##### Area of Concern

Area of Concern (AOC) include both (1) Solid Waste Management Units (SWMU's) where releases of hazardous substances may have occurred and (2) locations where there has been a release or threat of a release into the environment of a hazardous substance, pollutant or contaminant (including radionuclides) under CERCLA.

##### Contaminant of Concern (COC)

Any hazardous constituent or chemical contaminant detected in excavation site soil or associated with an AOC or regulated unit within which an excavation site is located.

##### Commercial Land

Commercial land is land with potential exposure of adult workers during a business day and potential exposures of adults and children who are customers, patrons or visitors to such facilities. Examples of commercial land include, but are not limited to: building supply facilities; office buildings; hotels; and parking facilities.

##### Disposal Parameters

A listing of waste constituents and properties.

##### Generic Direct-Contact Soil Standard

*"A generic numerical standard based on an exposure resulting from ingestion of soil, dermal contact with soil or inhalation of volatile and particulate emissions from soil"* (from Ohio Administrative Code (OAC) rule 3745-300-08).

##### Industrial Land

Industrial land is land with exposure of adult workers during a business day. Industrial land use must reliably exclude the general public and children from access to the facility. Examples of industrial land include, but not limited to: power plants; manufacturing facilities; chemical plant; non-public airport areas; and limited access highways.

### Small-Scale Excavation

A small excavation where all excavated soil is to be returned to its original location. The determination of what constitutes a small-scale excavation will be left to the discretion of EMO. Examples of a small-scale excavation include grounds maintenance, planting of shrubs, installation of fence posts, or some emergency pipe repairs.

### VAP

The Ohio Voluntary Action Program (Ohio VAP) as defined in OAC rules 3745-300-01 through 3745-300-15.

## **POLICY**

It is GRC policy to:

- Evaluate the need for analyses on all soils prior to excavation;
- Minimize the volume and toxicity of waste soils generated by GRC operations to the extent technically and legally possible, and economically practicable;
- Reuse excavated soil as fill material at GRC whenever possible;
- Fulfill the requirements of solid and hazardous waste disposal facilities.
- Comply with state and Federal regulations

## **REQUIREMENTS**

### Site Assessment

A site assessment is a requirement for any project at GRC that includes the excavation of soil. The site assessment consists of the following:

- A review of available records to determine if the excavation site is located within the boundary of an AOC or other regulated unit.
- A review of available records and laboratory analytical data to determine whether a release of chemicals or wastes has occurred and to identify potential COC's based on past operations conducted at or near the excavation site.
- A review of available laboratory analytical data generated from the sampling and analyses of soil from within the excavation site to characterize the soil for reuse and/or to support disposal characterization.

The goal of a site assessment is to characterize the soil so that it will be properly managed. A site assessment is not required for a small-scale excavation (as determined by EMO).

### Pre-Construction Soil Sampling

For an excavation site determined to be located within or near the boundary of an AOC or regulated unit, pre-construction sampling is required in the absence of available laboratory analytical data generated from the sampling and analyses of soil from within the excavation site. Soil samples will be analyzed for COC's associated with the AOC or regulated unit and any other COC's identified during the excavation site assessment.

For an excavation site determined not to be located within or near the boundary of an AOC or regulated unit, pre-construction sampling is required if the site assessment indicates the potential for a past release of chemicals or wastes to the soil.

The pre-construction sampling described above will be conducted prior to the start of construction and, in most cases, will require the installation of soil borings to obtain samples from appropriate depths. On a case-by-case basis, EMO will develop site-specific sampling recommendations as part of the pre-construction planning process. EMO or an outside party will develop a site-specific sampling plan that will incorporate these recommendations. EMO will review and approve all sampling plans developed by outside parties.

### Analytical Data Evaluation

A determination that excavated soil is a waste will be based upon the results of the site assessment and will include an evaluation of all applicable laboratory analytical data resulting from previous soil sampling events and/or pre-

construction soil sampling and will be conducted in accordance with OAC rule 3745-52-11. In addition, soil to be excavated from within or near an AOC or regulated unit will be evaluated against the Ohio VAP Generic Direct Contact Soil Standards as listed in OAC rule 3745-300-08. Soil with constituents detected at maximum concentrations less than Ohio VAP Generic Direct Contact Residential Standards or Commercial Standards will be considered for use on-site or off-site for use at commercial or industrial lands. .

#### Waste Disposal Characterization

Waste disposal characterization will consist of the collection of soil samples analyzed for the full list of disposal facility parameters, and may be conducted as part of pre-construction soil sampling. EMO will maintain the list of disposal parameters.

#### Soil Excavation

If soil discoloration, odors, debris, or other evidence of past disposal or release of chemicals or wastes is encountered during excavation activities, work on the project must stop and project personnel must report the findings to the NASA Project Manager or Contracting Officer Technical Representative (COTR). The NASA Project Manager or COTR then will consult with EMO to determine the appropriate course of action.

#### Excavated Soil Disposition

Soil classified as solid waste, Toxic Substances Control Act (TSCA) waste, or hazardous waste will be disposed of only at a landfill licensed to accept the soil. Soil that is not classified as a waste may be released to use as commercial or industrial land fill.

### **RESPONSIBILITIES**

#### Facilities Division (FD)

- Have a site assessment performed for all projects that include the excavation of soil. For, FD, this is done through the site assessment coordinator.
- Have pre-construction soil sampling performed, if required, by EMO or an appropriate contractor for all construction or facility maintenance projects early in the planning phase. For FD this is done through the site assessment coordinator.
- Coordinate all projects requiring pre-construction soil sampling with the EMO.
- For emergency or unplanned projects requiring excavation, contact the Environmental Team (ET) for guidance and recommendations concerning the appropriate environmental requirements.
- Arrange for the disposal of excavated soil as recommended by ET.
- Ensure that contractors under their control fill out non-hazardous waste, hazardous waste, and solid waste manifests with coordination and guidance from ET and the Waste Management Team (WMT).
- Obtain the appropriate EMO signatures on profiles and manifests.
- Ensure that when soil discoloration, odors, debris, or other evidence of past disposal or release of chemicals or waste is encountered, work on the site will stop and the findings are reported to EMO.

#### Other GRC Organizations

All GRC organizations planning projects where soil is to be excavated must contact ECT for guidance. Pre-construction soil sampling may be required to determine the potential hazard of the soil if previous environmental data are unavailable.

#### Environmental Team

- Review and approve all sampling and analysis plans.
- Reviews site assessment reports and recommends proper disposal or soil placement procedures; and completes Soil Determination Checklist (C-133).
- Reviews and approves potential disposal sites.

- Ensures that all analytical needs for the disposal facility have been met.
- Provides signature authority on all waste and non-waste manifests for off-site shipments.
- Provides guidance to FD and designated contractors on a daily basis.
- Maintains an inventory on all previous environmental assessments and pertinent environmental analysis.
- Maintain a record of each site assessment that includes site historic information, sampling decisions, sampling plans, analytical data, and waste characterization and classification.
- Obtains authorization from the Director of the Ohio EPA for any construction on previous or existing solid or hazardous waste sites.
- Coordinates with outside agencies as appropriate.

#### Waste Management Team

- Reviews hazardous, non-hazardous, and non-waste manifests, and their associated documents, and advises ECT whether they meet requirements for signature
- Tracks returned manifests and maintain shipping documents, which include manifests, land disposal notifications, and related documents.
- Provides regulatory compliance checks on potential transporters and treatment, storage, and disposal facilities.
- Maintain list of waste disposal parameters.

#### **RECORDS**

Soil Determination Checklist (C-133), waste profiles, waste manifests, and the site assessment reports. The site assessment report includes site historic information, sampling decisions, sampling plans, analytical data, and waste characterization and classification. ET maintains these records.

#### **REFERENCES**

The following regulatory documents and GRC guidance documents are to be followed:

- 40 Code of Federal Regulations (CFR) 243 - (as amended) Guidelines for the Storage and Collection of Residential, Commercial, and Institutional Solid Waste.
- 40 CFR 260, 263 - (as amended) Hazardous Waste Management System.
- OAC3745-52, OAC3745-53, and OAC3745-59 – Ohio Hazardous Waste generation, transport and disposal requirements.
- Ohio Solid Waste Disposal Regulations OAC rule 3745-27.
- Ohio Hazardous Waste Regulations OAC rule 3745-51.

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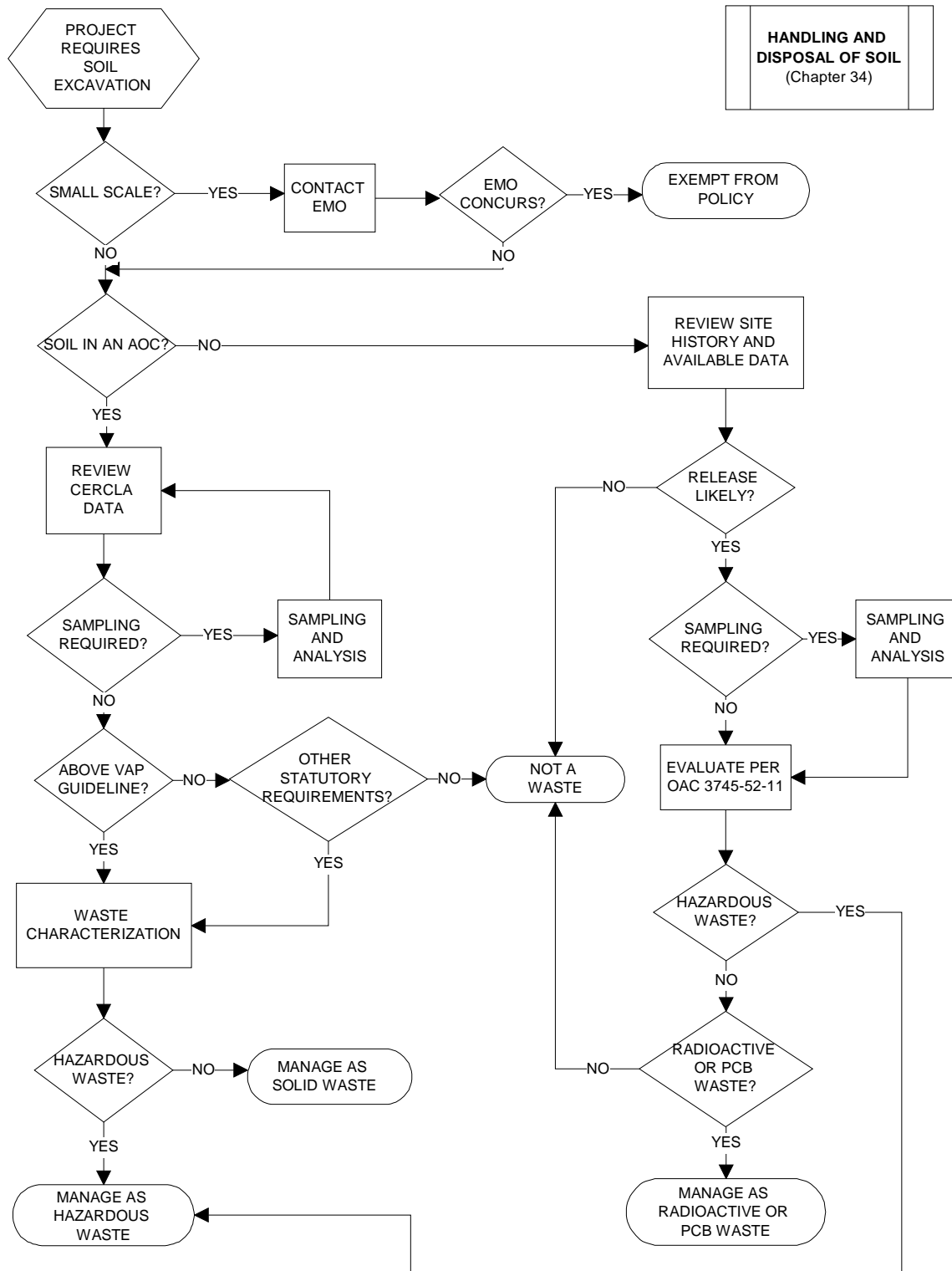
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## Soil Determination Checklist

1. Location of excavation: \_\_\_\_\_
2. Is the site within or near a CERCLA Area of Concern (AOC)? YES ☐ NO ☐
3. Is there evidence of contamination? YES ☐ NO ☐
4. Do any soil sampling data exist? YES ☐ NO ☐
5. Is the existing data adequate? YES ☐ NO ☐ TBD [Go to #9] ☐
6. Should additional data be collected and evaluated? YES ☐ NO ☐ TBD ☐
7. Soil in the AOC is

Below Voluntary Action Plan (VAP) residential standards	
Above VAP residential / Below commercial standards	
Above VAP commercial standards	

8. Is the soil determined to be a waste? YES ☐ NO ☐ TBD ☐
9. Why or why not?

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**Note: All soil determined to be a waste must be properly characterized for disposal.**

Attachments:

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Reviewer: \_\_\_\_\_ Date: \_\_\_\_\_